



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.:	IECEX KEM 06.0038X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 6	Issue 5 (2018-02-22)
Date of Issue:	2021-09-27		Issue 4 (2013-01-17)
Applicant:	Endress+Hauser Wetzer GmbH+Co. KG Obere Wank 1 87484 Nesselwang Germany		Issue 3 (2011-11-18)
Equipment:	Temperature Transmitter iTEMP Type TMT142 and iTEMP Type TMT162		Issue 2 (2010-01-20)
Optional accessory:			Issue 1 (2009-06-24)
Type of Protection:	Ex ia		Issue 0 (2006-09-18)
Marking:	Ex ia IIC/IIB/IIA T6...T4 Ga Ex ia IIIC T85 °C ... T110 °C Db		

Approved for issue on behalf of the IECEx
Certification Body:

R. Schuller

Position:

Certification Manager

Signature:
(for printed version)

Date:

2021-09-27

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

DEKRA Certification B.V.
Meander 1051
6825 MJ Arnhem
Netherlands





IECEX Certificate of Conformity

Certificate No.: **IECEX KEM 06.0038X**

Page 2 of 4

Date of issue: 2021-09-27

Issue No: 6

Manufacturer: **Endress+Hauser Wetzler GmbH+Co. KG**
Obere Wank 1
87484 Nesselwang
Germany

Additional manufacturing locations:

Endress+Hauser Wetzler (India) Pvt. Ltd. M-171/173, MIDC, Waluj, Aurangabad – 431 136 India	Endress + Hauser Sicestherm S.r.l. Via Martin Luther King, 7/9 I-20060 Pessano con Bornago (MI) Italy	Endress+Hauser Wetzler (Suzhou) Co. Ltd. Jiang-Tian-Li-lu No.31, 215021 Suzhou-SIP (P.R. China) China
---	---	---

Endress+Hauser Wetzler USA INC
2413 Endress Place
Greenwood, IN 46143
United States of America

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEX Quality system requirements. This certificate is granted subject to the conditions as set out in IECEX Scheme Rules, IECEX 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[NL/KEM/ExTR06.0038/06](#)

Quality Assessment Report:

[DE/TUN/QAR06.0009/09](#)



IECEX Certificate of Conformity

Certificate No.: **IECEX KEM 06.0038X**

Page 3 of 4

Date of issue: 2021-09-27

Issue No: 6

EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

Temperature Transmitters iTEMP Type TMT142 and iTEMP Type TMT162 consist of an enclosure, made of aluminium or stainless steel, containing electronic circuits, terminals and optionally a display. The transmitters are used to convert the measurement signal of an external or an integral temperature sensor into an output signal.

Depending on the version, the transmitter provides a 4 - 20 mA current output signal with HART communication or is connected to a fieldbus (Profibus PA or Foundation Fieldbus) (iTEMP Type TMT162 only).

For more information regarding Thermal data, Electrical data and Type designation see Annex 1 to Report No. NL/KEM/ExTR06.0038/06.

SPECIFIC CONDITIONS OF USE: YES as shown below:

When the enclosure of the Temperature Transmitter iTEMP Type TMT142 and iTEMP Type TMT162 is made of aluminum, if it is mounted in an area where the use of EPL Ga apparatus is required, it must be installed such, that, even in the event of rare incidents, ignition sources due to impact and friction sparks are excluded.

When the enclosure is provided with a non-conductive coating, electrostatic charges on the equipment enclosure shall be avoided. For more details see safety instructions.



IECEx Certificate of Conformity

Certificate No.: **IECEx KEM 06.0038X**

Page 4 of 4

Date of issue: 2021-09-27

Issue No: 6

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
Assessed per IEC 60079-0 Ed. 7

Annex:

[225649300-Annex1 to ExTR06.0038.06.pdf](#)

Description

Temperature Transmitters iTEMP Type TMT142 and iTEMP Type TMT162 consist of an enclosure, made of aluminium or stainless steel, containing electronic circuits, terminals and optionally a display. The transmitters are used to convert the measurement signal of an external or an integral temperature sensor into an output signal.

Depending on the version, the transmitter provides a 4 - 20 mA current output signal with HART communication or is connected to a fieldbus (Profibus PA or Foundation Fieldbus) (iTEMP Type TMT162 only).

Thermal data

The temperature class and maximum temperature of the enclosure T xx °C, applicable to a maximum dust layer thickness of 5 mm, are depending on the ambient temperature range listed in the following table:

Type of protection	Temperature class	Ambient temperature range
Ex ia IIC	T6	-40 °C to +55 °C
	T5	-40 °C to +70 °C
	T4	-40 °C to +85 °C
Ex ia IIIC	T85 °C	-40 °C to +55 °C
	T100 °C	-40 °C to +70 °C
	T110 °C	-40 °C to +85 °C

Electrical data

Transmitters with 4 - 20 mA current output:

Supply/output circuit (terminals + and -): in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with following maximum values:

$U_i = 30 \text{ V}$, $I_i = 300 \text{ mA}$, $P_i = 1 \text{ W}$, $C_i = 5 \text{ nF}$, $L_i = 0 \text{ mH}$.

Sensor circuits (terminals 1 ... 6): in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, with following maximum values:

$U_o = 7.6 \text{ V}$, $I_o = 29.3 \text{ mA}$, $P_o = 55.6 \text{ mW}$, $C_o = 10.4 \text{ }\mu\text{F}$ (IIC) or $160 \text{ }\mu\text{F}$ (IIB/IIIC) or $1000 \text{ }\mu\text{F}$ (IIA),
 $L_o = 40 \text{ mH}$ (IIC) or 150 mH (IIB/IIIC) or 300 mH (IIA).

The sensor circuit is galvanically isolated from the supply and output circuit up to a peak voltage of 60 V.

Transmitters with fieldbus connection (iTEMP Type TMT162 only)

Supply/output circuit Profibus PA or Foundation Fieldbus (terminals + and -):

- in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, for connection to a certified intrinsically safe Fieldbus according to the FISCO Model, with following maximum values:

$U_i = 17.5 \text{ V}$, $I_i = 500 \text{ mA}$, $P_i = 5.32 \text{ W}$, $C_i = 5 \text{ nF}$, $L_i = 10 \text{ }\mu\text{H}$; or

- in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, for connection to a certified intrinsically safe circuit, with following maximum values:

$U_i = 24 \text{ V}$, $I_i = 250 \text{ mA}$, $P_i = 1.2 \text{ W}$, $C_i = 5 \text{ nF}$, $L_i = 10 \text{ }\mu\text{H}$.

Sensor circuits (terminals 1 ... 6): in type of protection intrinsic safety Ex ia IIC and Ex IIIC, with following maximum values:

$U_o = 8.6 \text{ V}$, $I_o = 26.9 \text{ mA}$, $P_o = 57.6 \text{ mW}$, $C_o = 6.2 \text{ }\mu\text{F}$ (IIC) or $55 \text{ }\mu\text{F}$ (IIB/IIIC) or $1000 \text{ }\mu\text{F}$ (IIA),
 $L_o = 48 \text{ mH}$ (IIC) or 180 mH (IIB/IIIC) or 380 mH (IIA).

The sensor circuit is galvanically isolated from the supply and output circuit up to a peak voltage of 60 V.

Type designation

Series No Suffix Code
TMT142- **abcdefghijkl**

Designation	Explanation	Value	Explanation
a	Approval	B	ATEX II 1G Ex ia IIC T6 Ga
		P	IECEX Ex ia IIC T6 Ga
		Q	IECEX Ex ia IIC T6 Ga, Ex ia IIIC Db
		T	ATEX II 1G Ex ia IIC T6 Ga, II 2D Ex ia IIIC Db
b	Housing	1	Alu, w/o display
		2	Alu + display
		3	316L, w/o display
		4	316L + display
		9	Combination of 1 to 4 + Non-conductive varnish
c	Cable Entry	1	3x thread NPT1/2
		2	3x thread M20x1.5
		4	3x thread G 1/2
		6	2x cable gland M20x1.5
d	Mounting Bracket	/	Not relevant for Explosion Safety
e	Configuration Connection	A	Factory setup Pt100 3-wire 0-100°C
		1	Thermocouple TC
		2	RTD 2-wire
		3	RTD 3-wire
		4	RTD 4-wire
f	Configuration Sensor Type	/	Not relevant for Explosion Safety
g	Configuration	/	Not relevant for Explosion Safety
h	Additional Option	/	Not relevant for Explosion Safety
i	Sensor input	A	1x input
j	Version	1	Standard
k	Customer Specific Modifications	/	Not relevant for Explosion Safety
l	Marking	/	Not relevant for Explosion Safety

Series No Suffix Code
TMT162- **abcdefghijklmn**

Designation	Explanation	Value	Explanation		
a	Approval	B	ATEX II 1G Ex ia IIC T6 Ga		
		H	ATEX Ex d, Ex ia		
		P	IECEX Ex ia IIC T6 Ga		
		Q	IECEX Ex ia IIC T6 Ga, Ex ia IIIC Db		
		T	ATEX II 1G Ex ia IIC T6 Ga, II 2D Ex ia IIIC Db		
b	Housing	1	Alu, w/o display		
		2	Alu + display, illum.		
		3	316L, w/o display		
		4	316L + display, illum.		
		5	T17, 316L, w/o display, ¹⁾		
		6	T17, 316L, display illum. ¹⁾		
		9	Combination of 1 to 4 + Non-conductive varnish		
c	Cable Entry	/	Not in the scope		
d	Mounting Bracket	/	Not relevant for Explosion Safety		
e	Configuration Connection	A	Factory setup Pt100 3-wire 0-100°C		
		1	Thermocouple TC		
		2	RTD 2-wire		
		3	RTD 3-wire		
e	Configuration Connection	4	RTD 4-wire		
		f	Configuration Sensor Type	/	Not relevant for Explosion Safety
		g	Communication Configuration	A	HART; Factory setup Pt100 3-wire, 0-100 oC, NAMUR NE43
				B	HART; Measuring range, see additional spec., NAMUR NE43
C	HART; TC config. range, see questionnaire, NAMUR NE43				
D	HART; RTD config. range, see questionnaire, NAMUR NE43				
E	PROFIBUS PA; see additional spec.				
F	PROFIBUS PA; Factory setup				
K	FOUNDATION Fieldbus; Factory setup				
L	FOUNDATION Fieldbus; see additional specification				
h	Additional Option	/	Not relevant for Explosion Safety		
i	Sensor	/	Not relevant for Explosion Safety		
j	Additional Approval:	/	Not relevant for Explosion Safety		
k	Accessory Mounted	NA	Integrated overvoltage protection		
l	Customer Specific Modifications	/	Not relevant for Explosion Safety		
m	Firmware Version	76	02.00.zz, FF, DevRev03		
		78	01.01.zz PROFIBUS PA, Profile 3.02,		
		77	01.03.zz HART 5, DevRev02		
n	Marking	/	Not relevant for Explosion Safety		

Note: ¹⁾ not allowed for option a = H

Description

Temperature Transmitters iTEMP Type TMT142 and iTEMP Type TMT162 consist of an enclosure, made of aluminium or stainless steel, containing electronic circuits, terminals and optionally a display. The transmitters are used to convert the measurement signal of an external or an integral temperature sensor into an output signal.

Depending on the version, the transmitter provides a 4 - 20 mA current output signal with HART communication or is connected to a fieldbus (Profibus PA or Foundation Fieldbus) (iTEMP Type TMT162 only).

Thermal data

The temperature class and maximum temperature of the enclosure T_{xx} °C, applicable to a maximum dust layer thickness of 5 mm, are depending on the ambient temperature range listed in the following table:

Type of protection	Temperature class	Ambient temperature range
Ex ia IIC	T6	-40 °C to +55 °C
	T5	-40 °C to +70 °C
	T4	-40 °C to +85 °C
Ex ia IIIC	T85 °C	-40 °C to +55 °C
	T100 °C	-40 °C to +70 °C
	T110 °C	-40 °C to +85 °C

Electrical data

Transmitters with 4 - 20 mA current output:

Supply/output circuit (terminals + and -): in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, only for connection to a certified intrinsically safe circuit, with following maximum values:

U_i = 30 V, I_i = 300 mA, P_i = 1 W, C_i = 5 nF, L_i = 0 mH.

Sensor circuits (terminals 1 ... 6): in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, with following maximum values:

U_o = 7.6 V, I_o = 29.3 mA, P_o = 55.6 mW, C_o = 10.4 μF (IIC) or 160 μF (IIB/IIIC) or 1000 μF (IIA),
L_o = 40 mH (IIC) or 150 mH (IIB/IIIC) or 300 mH (IIA).

The sensor circuit is galvanically isolated from the supply and output circuit up to a peak voltage of 60 V.

Transmitters with fieldbus connection (iTEMP Type TMT162 only)

Supply/output circuit Profibus PA or Foundation Fieldbus (terminals + and -):

- in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, for connection to a certified intrinsically safe Fieldbus according to the FISCO Model, with following maximum values:

U_i = 17.5 V, I_i = 500 mA, P_i = 5.32 W, C_i = 5 nF, L_i = 10 μH; or

- in type of protection intrinsic safety Ex ia IIC and Ex ia IIIC, for connection to a certified intrinsically safe circuit, with following maximum values:

U_i = 24 V, I_i = 250 mA, P_i = 1.2 W, C_i = 5 nF, L_i = 10 μH.

Sensor circuits (terminals 1 ... 6): in type of protection intrinsic safety Ex ia IIC and Ex IIIC, with following maximum values:

U_o = 8.6 V, I_o = 26.9 mA, P_o = 57.6 mW, C_o = 6.2 μF (IIC) or 55 μF (IIB/IIIC) or 1000 μF (IIA),
L_o = 48 mH (IIC) or 180 mH (IIB/IIIC) or 380 mH (IIA).

The sensor circuit is galvanically isolated from the supply and output circuit up to a peak voltage of 60 V.

Type designation

Series No Suffix Code
TMT142- **abcdefghijkl**

Designation	Explanation	Value	Explanation
a	Approval	B	ATEX II 1G Ex ia IIC T6 Ga
		P	IECEX Ex ia IIC T6 Ga
		Q	IECEX Ex ia IIC T6 Ga, Ex ia IIIC Db
		T	ATEX II 1G Ex ia IIC T6 Ga, II 2D Ex ia IIIC Db
b	Housing	1	Alu, w/o display
		2	Alu + display
		3	316L, w/o display
		4	316L + display
		9	Combination of 1 to 4 + Non-conductive varnish
c	Cable Entry	1	3x thread NPT1/2
		2	3x thread M20x1.5
		4	3x thread G 1/2
		6	2x cable gland M20x1.5
d	Mounting Bracket	/	Not relevant for Explosion Safety
e	Configuration Connection	A	Factory setup Pt100 3-wire 0-100°C
		1	Thermocouple TC
		2	RTD 2-wire
		3	RTD 3-wire
		4	RTD 4-wire
f	Configuration Sensor Type	/	Not relevant for Explosion Safety
g	Configuration	/	Not relevant for Explosion Safety
h	Additional Option	/	Not relevant for Explosion Safety
i	Sensor input	A	1x input
j	Version	1	Standard
k	Customer Specific Modifications	/	Not relevant for Explosion Safety
l	Marking	/	Not relevant for Explosion Safety

Series No Suffix Code
TMT162- **abcdefghijklmn**

Designation	Explanation	Value	Explanation		
a	Approval	B	ATEX II 1G Ex ia IIC T6 Ga		
		H	ATEX Ex d, Ex ia		
		P	IECEX Ex ia IIC T6 Ga		
		Q	IECEX Ex ia IIC T6 Ga, Ex ia IIIC Db		
		T	ATEX II 1G Ex ia IIC T6 Ga, II 2D Ex ia IIIC Db		
b	Housing	1	Alu, w/o display		
		2	Alu + display, illum.		
		3	316L, w/o display		
		4	316L + display, illum.		
		5	T17, 316L, w/o display, ¹⁾		
		6	T17, 316L, display illum. ¹⁾		
		9	Combination of 1 to 4 + Non-conductive varnish		
c	Cable Entry	/	Not in the scope		
d	Mounting Bracket	/	Not relevant for Explosion Safety		
e	Configuration Connection	A	Factory setup Pt100 3-wire 0-100°C		
		1	Thermocouple TC		
		2	RTD 2-wire		
		3	RTD 3-wire		
e	Configuration Connection	4	RTD 4-wire		
		f	Configuration Sensor Type	/	Not relevant for Explosion Safety
		g	Communication Configuration	A	HART; Factory setup Pt100 3-wire, 0-100 oC, NAMUR NE43
				B	HART; Measuring range, see additional spec., NAMUR NE43
C	HART; TC config. range, see questionnaire, NAMUR NE43				
D	HART; RTD config. range, see questionnaire, NAMUR NE43				
E	PROFIBUS PA; see additional spec.				
F	PROFIBUS PA; Factory setup				
K	FOUNDATION Fieldbus; Factory setup				
L	FOUNDATION Fieldbus; see additional specification				
h	Additional Option	/	Not relevant for Explosion Safety		
i	Sensor	/	Not relevant for Explosion Safety		
j	Additional Approval:	/	Not relevant for Explosion Safety		
k	Accessory Mounted	NA	Integrated overvoltage protection		
l	Customer Specific Modifications	/	Not relevant for Explosion Safety		
m	Firmware Version	76	02.00.zz, FF, DevRev03		
		78	01.01.zz PROFIBUS PA, Profile 3.02,		
		77	01.03.zz HART 5, DevRev02		
n	Marking	/	Not relevant for Explosion Safety		

Note: ¹⁾ not allowed for option a = H